

Reply to Office Action dated October 28, 2005

REMARKS

Claims 1, 4-8, 30-37 and 44-55 are pending in this application. By this Amendment, claims 1, 8, 30, 31, 35-37 and 44 are amended, claims 23, 25-29 and 38-43 are canceled without prejudice or disclaimer, and new claims 45-55 are added. Various amendments are made to the claims for clarity and are unrelated to issues of patentability.

The Office Action rejects claims 1, 4-8 and 30-37 under 35 U.S.C. §102(b) over U.S. Patent Publication 2002/0008605 to Gardner. The Office Action also rejects claim 44 under 35 U.S.C. §103(a) over Gardner. The rejection is respectfully traversed.

Independent claim 1 recites a transformer that includes a plurality of parallel metal lines, and a magnetic material provided about the plurality of parallel metal lines, the magnetic material including a structure to reduce Eddy currents flowing in the magnetic material. Independent claim 1 further recites the structure including a plurality of parallel slots provided in the magnetic material, the plurality of parallel slots extending substantially perpendicular to the plurality of metal lines.

Gardner does not teach or suggest all the features of the transformer recited in independent claim 1. That is, the Office Action relies on Gardner's Figures 11 and 12 as well as referencing slots 122 and 124 (of Figure 1). However, the structure discussed in Gardner and shown in Figure 11 relates to an integrated transformer 1100 that includes an inductor 100 as well as another integrated inductor 1150. That is, the inductor 100 corresponds to a primary coil of a transformer and the inductor 1150 corresponds to a secondary coil. See paragraph [0099]. In other words, Gardner's elements 100 and/or 1150 correspond to inductors. Further,

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Gardner specifically states that conductors 110 and 116 are $2\frac{3}{4}$ generally octagonal shaped turns.

See, for example, paragraph [0101].

Gardner does not suggest a transformer that includes a plurality of parallel metal lines in combination with magnetic material provided about the plurality of parallel lines, and the magnetic material includes a plurality of parallel slots provided in the magnetic material. That is, Gardner's spiral shaped turns of the conductors 110 and 116 does not correspond to the claimed plurality of parallel metal lines. Furthermore, Gardner's spiral shaped turns do not correspond to a plurality of parallel metal lines of a transformer. Rather, the spiral shaped turns relate to an inductor.

Still further, when addressing dependent claim 44, the Office Action states that Gardner does not disclose the specific arrangement of the conductive lines. The Office Action then asserts that the specific use of straight lines instead of spiral conductive lines would have been an obvious design of consideration. Applicants respectfully disagree. In order to properly assert that the claimed features would have been a design choice, the Patent Office must show: (a) the features were known at the time the claims were made, (b) there exists some teaching in the art that would have led one of ordinary skill in the art to modify the primary reference to include the features. See In re Chu, 36 USPQ2d. 1089, 1095 (Fed. Cir. 1995). The Patent Office has not satisfied this test.

Transformers are primarily known as having primary coils and secondary coils. See, for example, Gardner's paragraph [0099]. However, independent claim 1 relates to a transformer that includes a plurality of parallel metal lines and a plurality of parallel slots extending

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substantially perpendicular to the plurality of parallel metal lines. One skilled in the art would not have considered it an obvious design choice to modify Gardner's spiral shaped turns so as to include a plurality of parallel metal lines (as well as the other features) of independent claim 1. That is, one skilled in the art would not have used straight metal lines for an inductor because using straight metal lines for an inductor would provide a small amount of induction. Further, there is no suggestion in the known prior art (such as the applied references) to utilize parallel metal lines for a transformer as claimed. The Office Action has not shown that the features were known at the time the claims were made and that there exists some teaching in the art that would have led one of ordinary skill in the art to modify the primary reference to include the features. Thus, applicants respectfully submit that the configuration of the plurality of parallel metal lines (and substantially parallel slots) would not have been an obvious design choice as alleged in the Office Action. Accordingly, independent claim 1 defines patentable subject matter at least for this reason.

Independent claim 31 defines patentable subject matter for at least similar reasons. That is, independent claim 31 recites a transformer that includes a plurality of parallel metal lines of the transformer, and a magnetic material provided about the plurality of parallel metal lines. Independent claim 31 further recites the magnetic material including a structure to reduce Eddy currents flowing in the magnetic material, the structure including a laminated magnetic structure having layers of magnetic material and insulation material. For at least similar reasons as set forth above, Gardner does not teach or suggest these features. More specifically, Gardner does

not suggest the claimed plurality of parallel metal lines of a transformer and the claimed magnetic material. Accordingly, independent claim 31 defines patentable subject matter.

Still further, independent claim 52 also defines patentable subject matter for at least similar reasons. That is, independent claim 52 recites a transformer that includes a plurality of metal lines of the transformer formed substantially parallel to each other, insulative material to surround the plurality of metal lines, magnetic material to surround the plurality of metal lines, and a plurality of slots formed on the magnetic material, the slots formed substantially perpendicular to the plurality of metal lines. For at least similar reasons as set forth above, Gardner does not teach or suggest these features. Thus, independent claim 52 defines patentable subject matter.

Each of the dependent claims depends from one of the independent claims and therefore defines patentable subject matter at least for this reason. In addition, the dependent claims recite features that further and independently distinguish over the applied references. For example, new claims 45-51 and 53-55 recite features that are not taught or suggested by Gardner. More specifically, dependent claim 45 recites insulation material provided in the plurality of parallel slots. See also dependent claim 53. Gardner does not teach or suggest this feature. Thus, dependent claim 45 and 53 define patentable subject matter at least for this additional reason.

Still further, dependent claim 50 recites the plurality of parallel metal lines extend from a first end to a second end, the metal lines at the first end coupled together and the metal lines at the second end coupled together. See also dependent claims 51 and 54. Gardner does not teach or suggest these features. Thus, dependent claims 50, 51 and 54 define patentable subject matter

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at least for this additional reason.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance of claims 1, 4-8, 30-37 and 44-55 are earnestly solicited. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **David C. Oren**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
FLESHNER & KIM, LLP



David C. Oren
Registration No. 38,694
Attorney for Intel Corporation

P.O. Box 221200
Chantilly, Virginia 20153-1200
(703) 766-3701 DCO/kahvcah

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Please direct all correspondence to Customer Number 34610